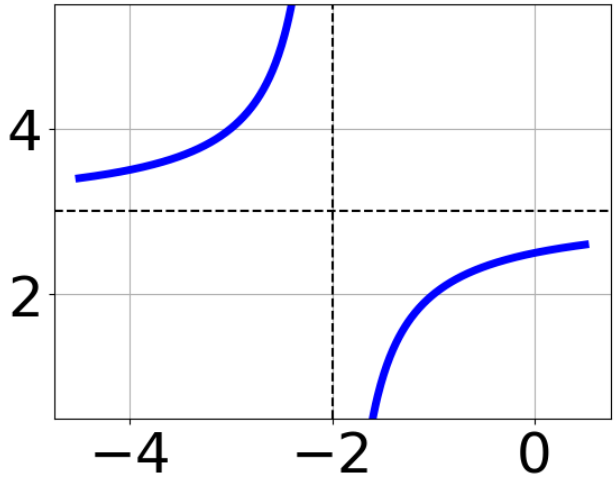
1. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x+2} + 3$

B. $f(x) = \dfrac{1}{(x-2)^2} + 3$

C. $f(x) = \dfrac{-1}{(x+2)^2} + 3$

D. $f(x) = \dfrac{1}{x-2} + 3$

E. None of the above

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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-84}{84x+36} + 1 = \frac{-84}{84x+36}$$

A. $x \in [-1.43, 0.57]$

B. $x \in [0, 1.3]$

C. $x_1 \in [-0.7, 0.2]$ and $x_2 \in [-0.4, 1.7]$

D. $x_1 \in [-0.7, 0.2]$ and $x_2 \in [-0.9, -0.2]$

E. All solutions lead to invalid or complex values in the equation.

3. Determine the domain of the function below.

$$f(x) = \frac{6}{25x^2 + 45x + 18}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-2.1, -0.7]$ and $b \in [-0.9, -0.2]$

B. All Real numbers except $x = a$, where $a \in [-30.6, -29.5]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-30.6, -29.5]$ and $b \in [-15.9, -14.6]$

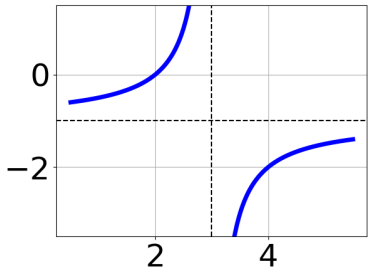
D. All Real numbers.

E. All Real numbers except $x = a$, where $a \in [-2.1, -0.7]$

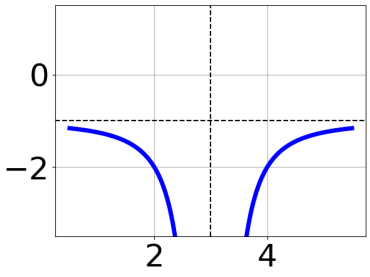
4. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x+3)^2} - 1$$

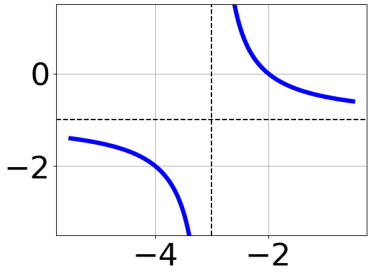
A.



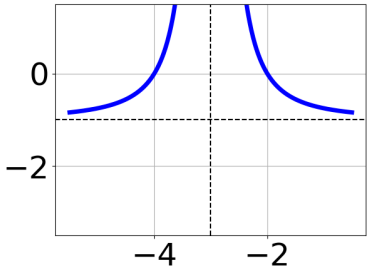
C.



B.



D.



E. None of the above.

5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{-7x-5} + \frac{-3x^2}{-14x^2-38x-20} = \frac{-5}{2x+4}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-3.93, -2.1]$ and $x_2 \in [-1.07, -0.51]$

C. $x \in [-2.81, -0.99]$

D. $x_1 \in [-3.93, -2.1]$ and $x_2 \in [-0.69, -0.27]$

E. $x \in [-0.99, 0.12]$

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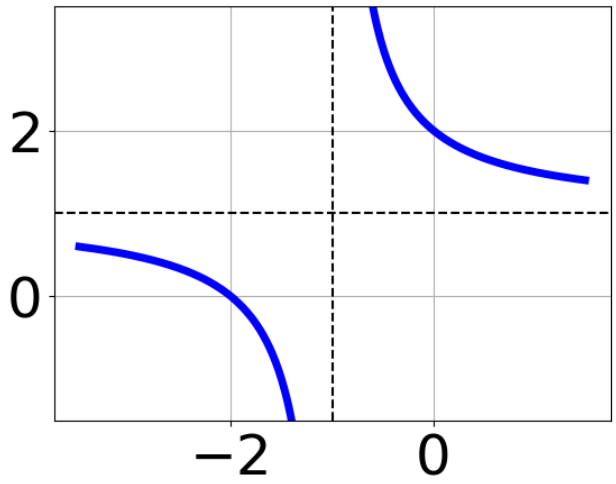
6. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-1} + 1$

B. $f(x) = \dfrac{1}{x+1} + 1$

C. $f(x) = \dfrac{-1}{(x-1)^2} + 1$

D. $f(x) = \dfrac{1}{(x+1)^2} + 1$

E. None of the above

7. Determine the domain of the function below.

$$f(x) = \frac{4}{15x^2 + 24x + 9}$$

A. All Real numbers.

B. All Real numbers except $x = a$, where $a \in [-15.49, -14.95]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-15.49, -14.95]$ and b $[-9.13, -8.74]$

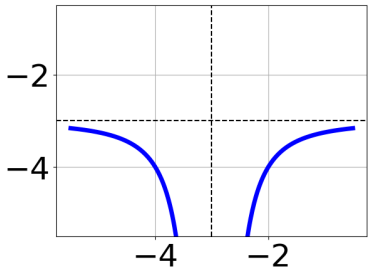
D. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.44, -0.83]$ and $b \in [-0.78, -0.34]$

E. All Real numbers except $x = a$, where $a \in [-1.44, -0.83]$

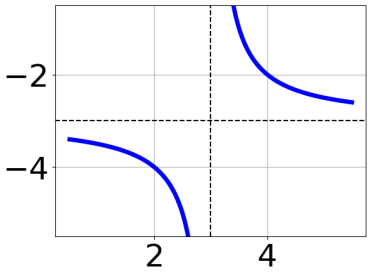
8. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x+3)^2} + 3$$

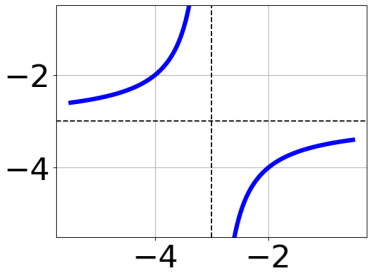
A.



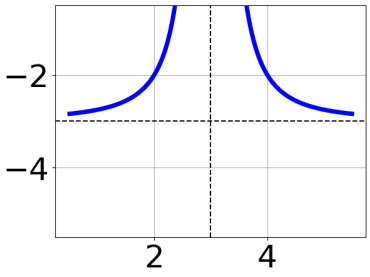
C.



B.



D.



E. None of the above.

9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-5x}{4x+3} + \frac{-2x^2}{-12x^2+19x+21} = \frac{-7}{-3x+7}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [2.32, 2.42]$

C. $x \in [-0.88, -0.65]$

D. $x_1 \in [-0.97, -0.81]$ and $x_2 \in [0.47, 1.31]$

E. $x_1 \in [-0.88, -0.65]$ and $x_2 \in [2.07, 3.03]$

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-24}{60x-24} + 1 = \frac{-24}{60x-24}$$

A. $x_1 \in [-0.5, -0.2]$ and $x_2 \in [0.4, 2.4]$

B. $x_1 \in [0.3, 0.8]$ and $x_2 \in [0.4, 2.4]$

C. $x \in [0.4, 1.4]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [-0.5, -0.2]$
